SERVICE MANUAL

marantz®

Model Ma-5

Mono Power Amplifier

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ Company has created the ultimate in stereo sound. Only original MARANTZ parts can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ stereo are generally available within 72 hours throughout the nation via a toll-free line to our National Parts Depot in California. The sales professionals who take your call immediately refer to their own desk top computer terminal and can quickly determine the availability and price information you require. If for some reason, your order should exceed our available stock, we usually can instantly provide an alternate replacement part or current delivery information. When the order is placed and confirmed, the computer simultaneously generates "hard copy" orders at the distribution center. As hard copies come directly from the computer to the national parts depot, your requested stock is assembled and prepared for shipment and placed on the first available carrier for delivery to you.

ORDERING PARTS

Phone orders will eliminate mail delays, and we encourage the use of this method. If you order by mail, use MARANTZ parts order forms which are available from our National Parts Depot located at the following address:

SUPERSCOPE NATIONAL PARTS DEPARTMENT
20525 Nordhoff Street
Chatsworth, California 91311
Phone: 1-800-423-5108
1-213-998-9333

The following information must be supplied to eliminate delays in processing your order:

1. Complete address.
2. Complete part numbers.
3. Complete description of parts.
4. Model number for which part is required (indicate MARANTZ).
5. Account number (for account customers only).

Direct consumers will be provided with the current retail prive quotation on available parts in order to advise them of the cost of the parts and shipping.

OVERSEAS PARTS ORDERING

Parts may also be ordered from the following overseas addresses:

CANADA

Superscope Canada, Ltd.
3710 Nashua Drive
Mississauga
Ontario, Canada L4V1M5

AUSTRALIA

Superscope (Australasia) Pty., Ltd.
32 Cross Street (P.O. Box 604)
Brookvale 2100 N.S.W.
Australia

JAPAN

Marantz Japan, Inc.
3622 Kamitsuruma
Sagamihara Shi
Kanagawa, Japan

EUROPE

Marantz Europe, S.A.
Avenue Leopold III, 2
7120 Peronnes-Lez-Binche
Belgium

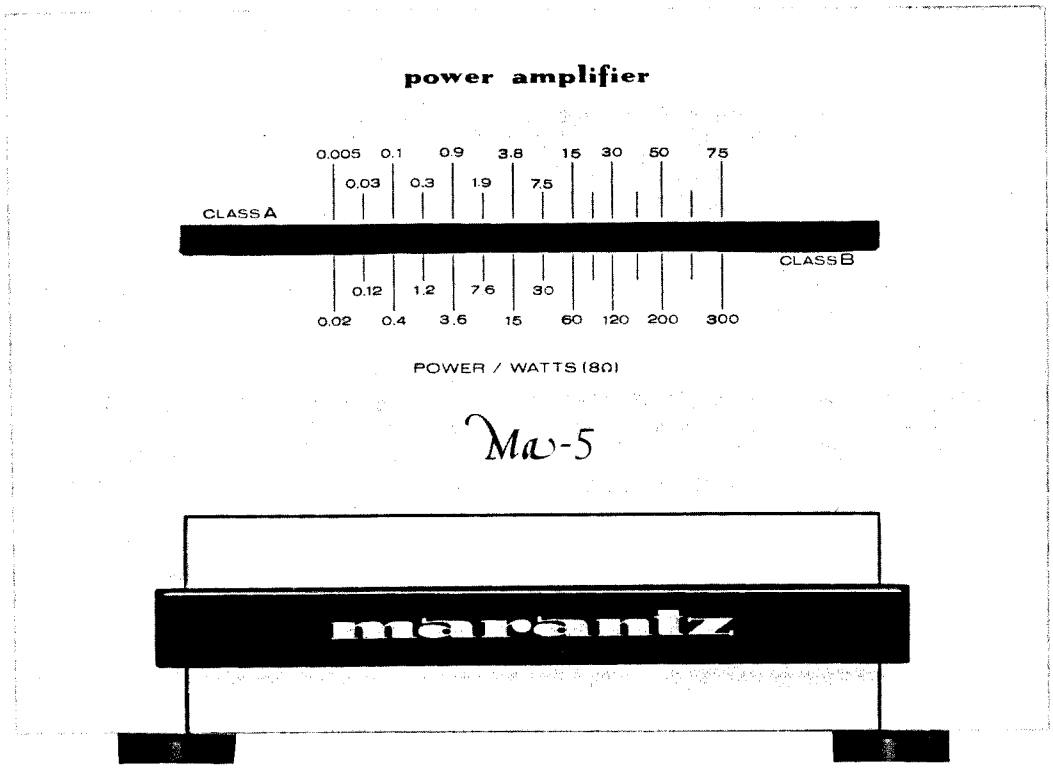
Marantz France
Rue Louis Armand 9
92600 Asnieres
Hauts-de-Seine
France

Marantz Audio U.K. Ltd.
London Road, 203
Staines
Middlesex
England

Marantz GmbH
Max-Planck-Strasse 22
D-6072 Dreieich 1
West Germany

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

MARANTZ MODEL Ma-5 MONO POWER AMPLIFIER



FEATURES

- **High power — 120W of dynamic "Marantz" sound (Class B operation)**
  Front the line input, the audio signal passes to the dual FETs in the buffer amp and then to the first stage which is a differential amplifier using dual transistors. One side of this differential output is phase inverted, while the output of the buffer amp passes to a pure push-pull amplifier which drives the final output stage. The power amplifier stage uses newly developed super high f_T power transistors in parallel three-stage Darlington connection. This makes possible handling high currents with sufficient heat radiating capacity.

- **With pure Class A operation, reproduction of music is fantastic**
  When switched to pure Class A operation, output power is 30W of sound without a trace of switching distortion. This power amplifier is ideal for handling the high frequencies in a multichannel system.

- **12 point LED peak power meter**
  The output level can be checked from the LED peak power meter specially designed for this high quality power amplifier. This power meter which incorporates a logarithmic compression indication circuit means that the output level can be monitored for both high level and low level outputs without switching to a different range.

- **Protective circuit which does not degrade tone quality**
  The overload protective circuit detects both overvoltage and overcurrent conditions, while in the area of safe operation (A.S.O.) does not degrade the operation of the drive transistors. The protective circuit has adaptable characteristics so that its operation does not interfere with the program and its operation is always constant.

- **DC amplification provides high fidelity waveform transmission and low TIM**
  DC amplification makes possible circuitry which transmits the waveform of the input signal with total accuracy; especially, at low frequencies there is absolutely no phase distortion. When used with high quality speaker systems, they are protected against pop noise from the pre-amp due to damage, etc. by separate AC and DC coupled inputs.

ADJUSTMENT

- **DC offset adjustment**
  Adjustment: R715 (22 kΩ)
  Input:
  Output: 8Ω load
  Measuring point: SP. OUT
  Connect a digital voltmeter to the SP. out terminals and adjust R715 until the output voltage is 0 mV.

- **Bias current adjustment**

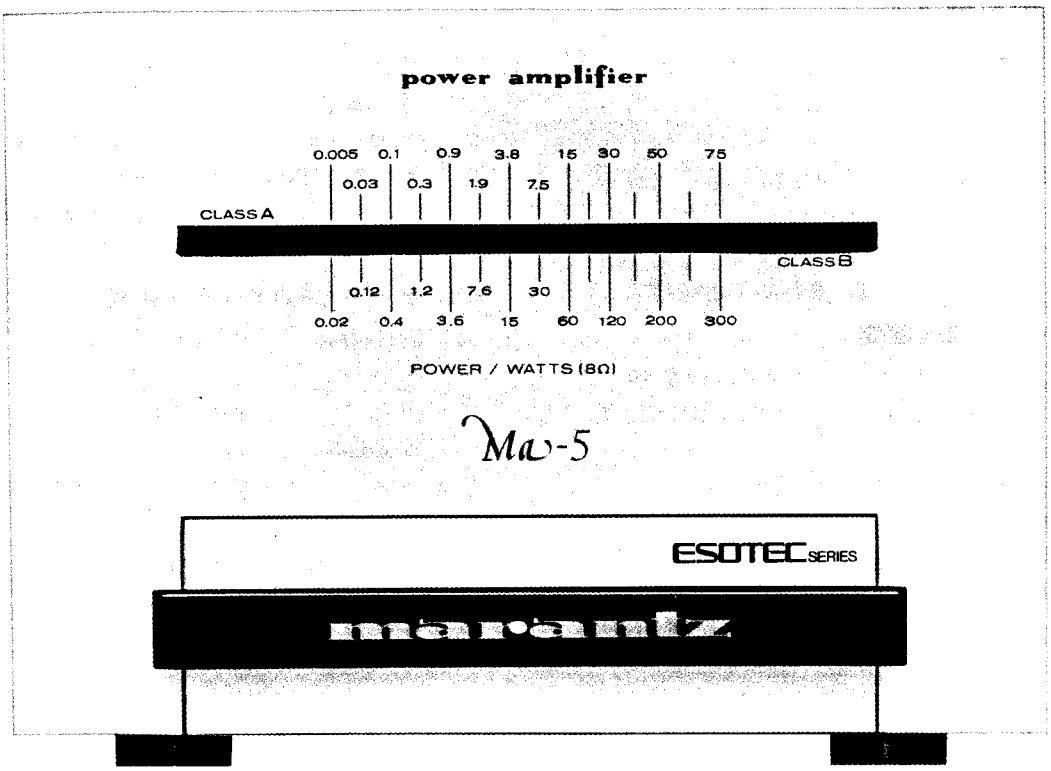
1. CLASS B (Set the rear panel CLASS A/B selector switch to CLASS B.)
   Adjustment: RN01 (1 kΩ)
   Input:
   Output: 8Ω load
   Measuring point: J707 (pins 1 ~ 3)
   Connect a digital voltmeter to J707. After the terminal Voltage stabilizes (approx. 30 ~ 60 seconds later), adjust RN01 until the voltmeter reads 27 mV.
2. CLASS A (Set the rear panel CLASS A/B selector switch to CLASS A.)
   Adjustment: RN02 (4.7 kΩ)
   Input:
   Output: 8Ω load
   Measuring point: J707 (pins 1 ~ 3)
   Connect a digital voltmeter to J707. After the terminal voltage stabilizes (approx. 30 ~ 60 seconds later), adjust RN02 until the voltmeter reads 220 mV.

- **Peak indicator LED adjustment**
  Adjustment: RX03 (1 kΩ)
  Input: 1 kHz
  Output: 8Ω load
  Measuring point: SP. OUT
  1) Set the rear panel CLASS A/B selector switch to CLASS B.
  2) Apply the specified input signal to the amplifier input and adjust the output level control until an output power of 120 watts (31.0V) is obtained. Then increase the generator output level further by 1 dB. (The input voltage is approximately 1.5V.)
  3) Adjust RX03 so the power indicator LED's indicating 120 and 200 watts both light in the same brightness.
  4) Set the rear panel CLASS A/B selector switch to CLASS A.
     Check that the power indicator LED indicates 30 watts when the amplifier delivers a power of 30 watts into 8Ω load.

REQUIRED MEASURING INSTRUMENTS

Table 1. List of required measuring instruments

Item	Purpose
Distortion meter	Measures distortion in amplifier output and its voltage.
Audio frequency generator	Signal source for audio-frequency sine and square waves.
Oscilloscope	Waveform analysis and troubleshooting.
V T V M	Voltage and resistance measurement.
AC power meter	Monitors amplifier's primary power consumption.
Voltmeter	Monitors amplifier's primary supply voltage.
Slidac (0 ~ 140VAC, 10A)	Adjusts amplifier's primary supply voltage.
Shorting plug	Used to short input jacks for noise prevention.
Output load resistor (8Ω ± 0.5%, 250W)	Load to amplifier output (8Ω).
Output load resistor (4Ω ± 0.5%, 250W)	Load to amplifier output (4Ω).



◇サービスに必要な測定器

表１．モデルMA-５をサービスするに必要な測定器の一覧表です。

項　　目	メーカーおよびモデル名（あるいは同等品）	使　　用　　法
歪　　率　　計	Hewlet Pakard model 331Aあるいは333A	アンプ出力の歪と電圧を測定する。
低周波発振器	Weston, model CVO-100P (注：残留歪0.02%以下のものが必要)	正弦波および矩形波の信号源として使用する。
オッシロスコープ	Tektronix, model 503 Data, model 555	波形分析およびトラブル・シューティングに使用する。
V　T　V　M	RCA Senior Volt-Ohmst, model WV-98C	電圧および抵抗値の測定に使用する。
交流ワット・メーター	Simpson, model 390	アンプの一次側消費電力をモニターする。
電源電圧計	市　販　品	アンプの一次側電源電圧をモニターする。
スライダック (0～140VAC, 10A)	Powerstat, model 116B	アンプの一次側電圧を調節する。
ショート用プラグ	中心ピンとシェルの間に600オームの抵抗を持つフォノ・プラグを使用。	雑音を拾わないようにアンプ入力を短絡するのに使用する。
出力負荷抵抗 (8Ω±0.5%, 250W)	市　販　品	アンプの出力に8Ωの負荷を与える。
出力負荷抵抗 (4Ω±0.5%, 250W)	市　販　品	アンプの出力に4Ωの負荷を与える。

⊠調整方法

A. DCオフセット電圧調整

調整個所　　R715(22KΩ)
入力　　————
出力　　8Ω（LOAD）
測定個所　　SP. OUT
出力にデジタル、ボルトメーターを接続し、出力が0mVになる様、R715を調整します。

B. バイアス電流調整

1) CLASS B（リアーパネルのCLASSⒷ－CLASSⒶの切換スイッチをCLASSⒷにする）
調整個所　　RN01（1KΩ）
入力　　————
出力　　8Ω（LOAD）
測定個所　　J707（ピン1～3）
J707にデジタル、ボルトメーターを接続し端子電圧が安定する（約30秒～1分）まで待ち、その後27mVになる様RN01を調整します。

2) CLASS A（リアーパネルのCLASSⒷ－CLASSⒶの切換スイッチをCLASSⒶにする）
調整個所　　RN02（4.7KΩ）
入力　　————
出力　　8Ω（LOAD）
測定個所　　J707（ピン1～3）
J707にデジタル、ボルト、メーターを接続し端子電圧が安定する（約30秒～1分）まで待ち、その後220mVになる様RN02を調整します。

C. ピークLEDメーター調整

調整個所　　RX03（1KΩ）
入力　　1KHZ
出力　　8Ω（LOAD）
測定個所　　SP. OUT

1) リアーパネルの切換スイッチをCLASSⒷにします。
2) 入力信号を入れ、出力が120W（31.0V）になる様に調整し、更に入力信号を1dBだけ増します。
（この時の入力電圧は約1.5V）
3) この状態でLEDの表示がLASSⒷで120Wと200Wの両方とも同じ明るさで点燈する様にRX03を調整します。
4) 次にリアーパネル切換をCLASSⒶにして、出力が30W（15.5V）の時にLED表示が、CLASSⒶで30Wを示すことを確認します。

⊠規格

Model M-5

■定格出力(20Hz～20kHz)…… クラスB駆動 120W（8Ω）
150W（4Ω）
純クラスA駆動 30W（8Ω）
■出力帯域幅(8Ω負荷，THD0.05%)…… 5Hz～100kHz
■全高調波歪率(20Hz～20kHz，8Ω負荷)…… 0.01%以下
■混変調歪率…… 0.01%以下
■周波数特性(20Hz～20kHz)…… ＋0，－0.2dB
(＋0，－1dB)…… DC～100kHz
■入力感度及びインピーダンス…… 1.5V／30kΩ
■ダンピングファクター(8Ω負荷1kHz)…… 100以上
■残留雑音(IHF-Aカーブ)…… 0.034mV
■その他
電　源…… 100V 50／60Hz
消費電力(電気用品取締法)…… 150W
外形寸法…… 208mm（幅）×146mm（高さ）334mm（奥行き）
重　量(セット単体)…… 10kg

仕様規格及び外観は改良のため予告なく変更することがあります。

◇回路図

Model Mv-5

Q701	Q702	Q703	Q704. Q705. Q711	Q706	Q707	Q708	Q709	Q710	Q712	Q713	Q714	Q715	Q716	Q717	Q718. Q720	Q719. Q721	Q722. Q723	Q724 ~ Q727 Q731 ~ Q738. Q742	Q730
HC10043050 2SK150	HT322592F0 2SC2259 F or G	HT322402A0 2SC2240 GR or BL	HT109702A0 2SA970 GR or BL	HT109701A0 2SA970 GR	HT322401A0 2SC2240 GR	HT109491B0 2SA949 Y	HT322291B0 2SC229 Y	HT315681S0 2SC1568 S	HT318152A0 2SC1815 O or Y	HT110152A0 2SA1015 O or Y	HT407571C0 2SD757 C	HT207171C0 2SB717 C	HT322381C0 2SC2238 O	HT109681C0 2SA968 O	HT325642A0 2SC2564 R or O	HT110942A0 2SA1094 R or O	HD30025090 WZ150	HD20011050 IS1555	HV00002120 SV-3A

Q739. Q740
HD20011010
W06C

Q741
HP00004230
PTH487A(BE)

QX01
HC10041050
TA7318P-2

QX02
HC10002380
UAA170

QX03~QX11
H110017020
LN36BP LCF

QX12~QX14
H110009020
LN26RP LCF

QX15. QX16
H110018020
LN46YP LCF

QX17. QX18
HD20011050
IS1555

QN01
HC10042050
TA7317P

QN02~QN05
HD20005010
W06B

QY01
HD20005010
W06B

QK01. QK02
HD20010210
IS2471G

QK03. QK04
HD20005010
W06B

Q001
HD20004290
S5VB-20

Q801 ~ Q804
HD20011010
W06C

PV00
INPUT ASSY.

P700
MAIN AMP.

P800 POWER SUPPLY

PK00

PX00 PEAK L.E.D

PY00

PN00 SPK. PROTECTOR and A. B SW

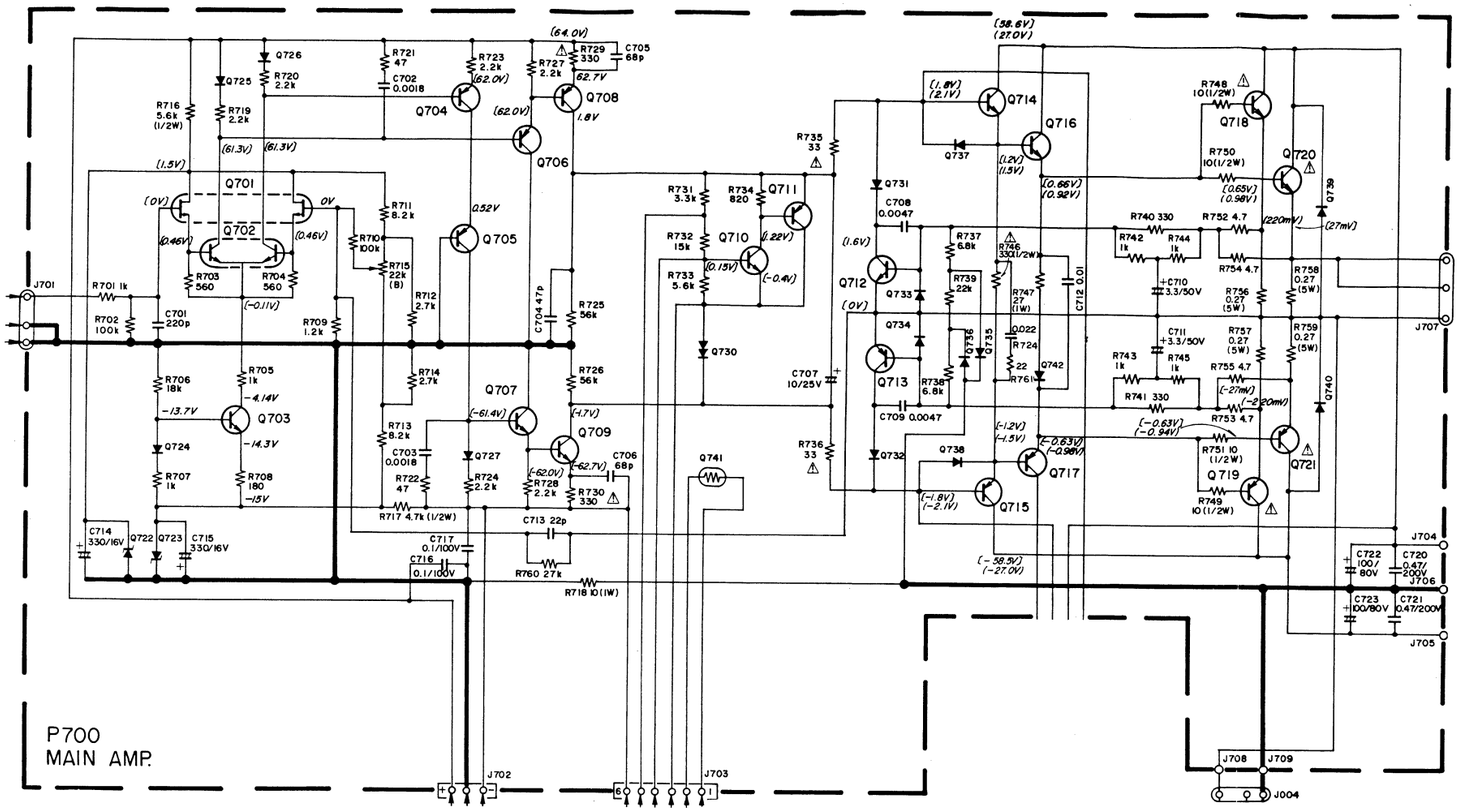
C BLOCK
PL00

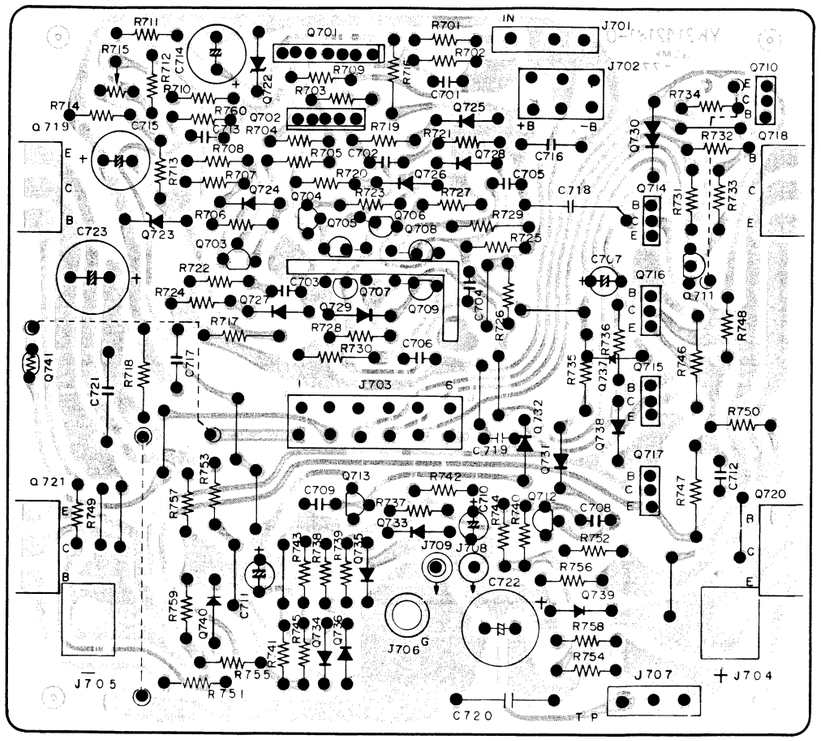
SPEAKER

( ) CLASS A VOLTAGE
( ) CLASS B VOLTAGE

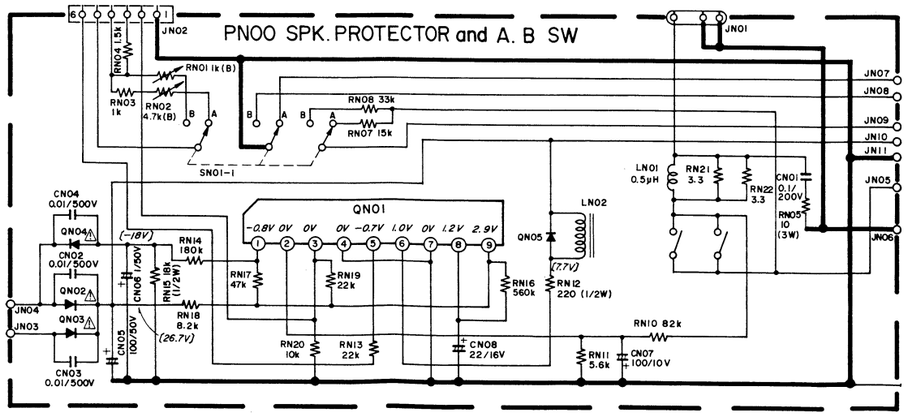
◇回路図と基板

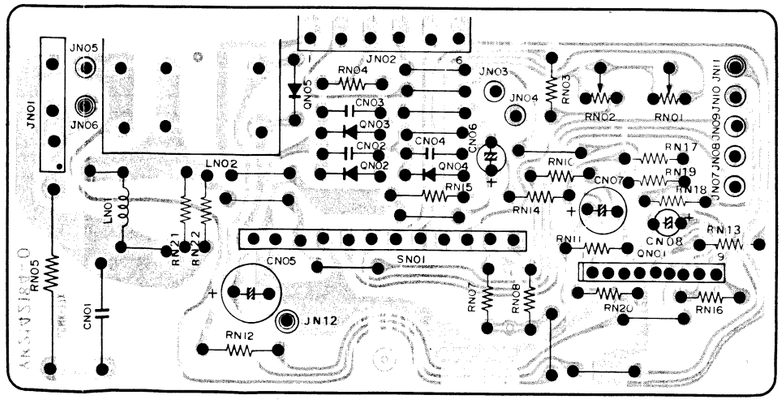
Main Amp. (P700) Schematic Diagram and Component Locations



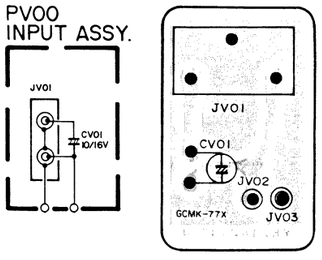


Spk. Protector and A-B Switch (PN00) Schematic Diagram and Component Locations

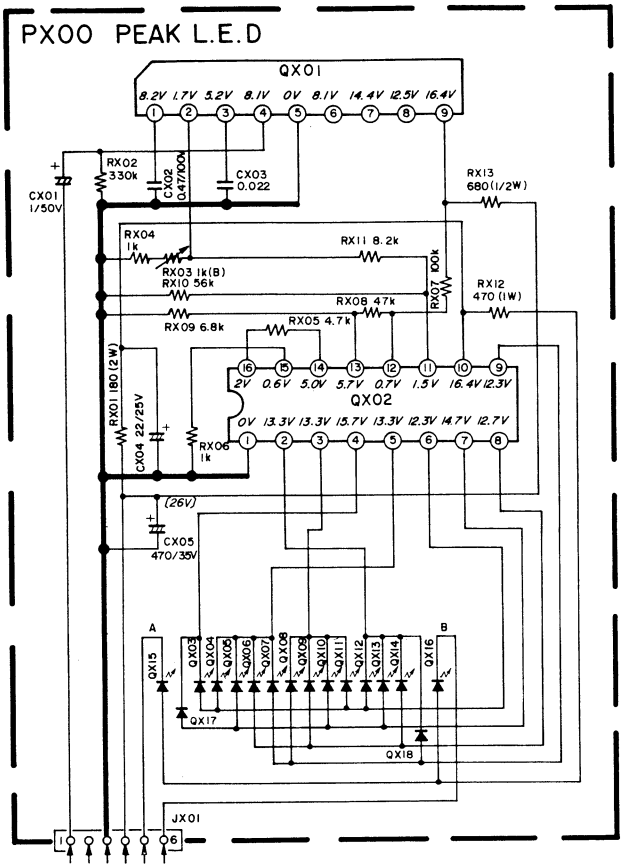


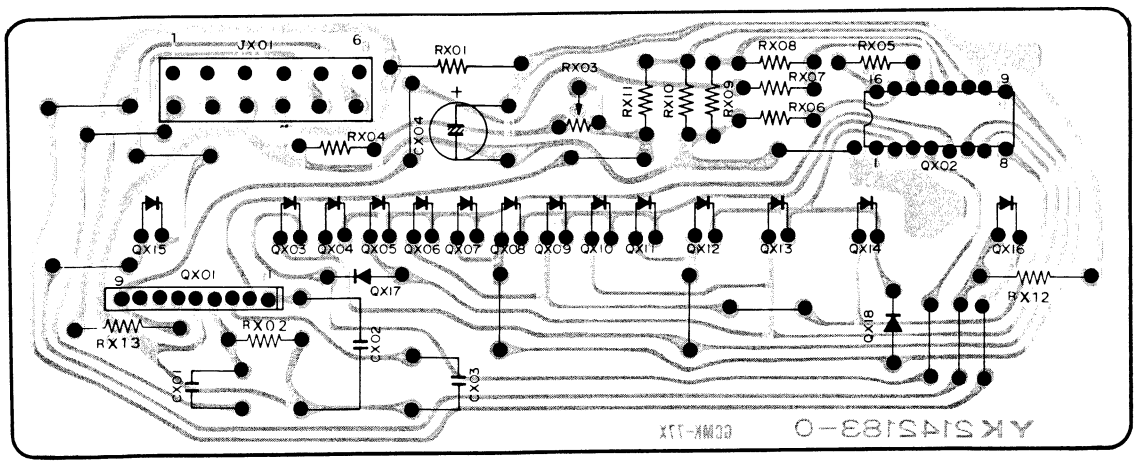


Input (PV00) Schematic Diagram and Component Locations

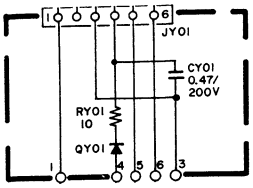


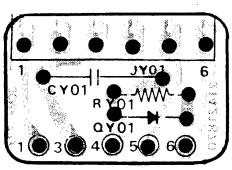
Peak LED (PX00) Schematic Diagram and Component Locations



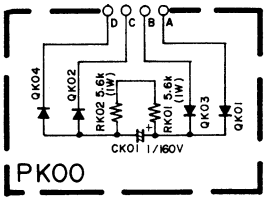


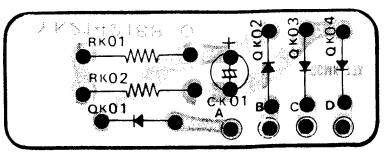
Connector (PY00) Schematic Diagram and Component Locations



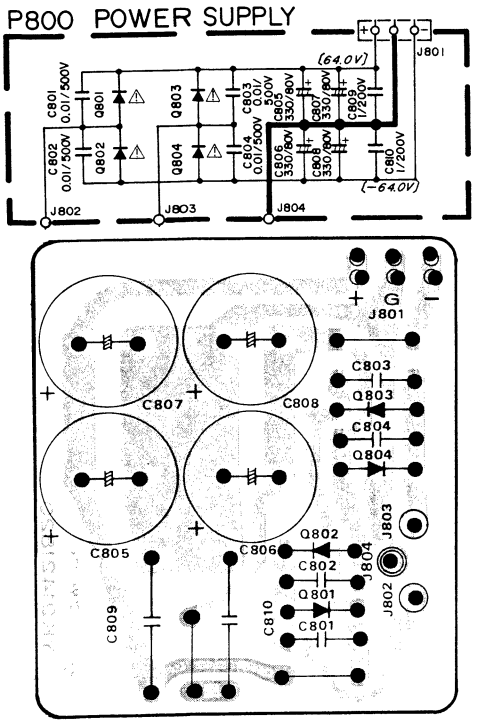


Sub Amp. (PK00) Schematic Diagram and Component Locations

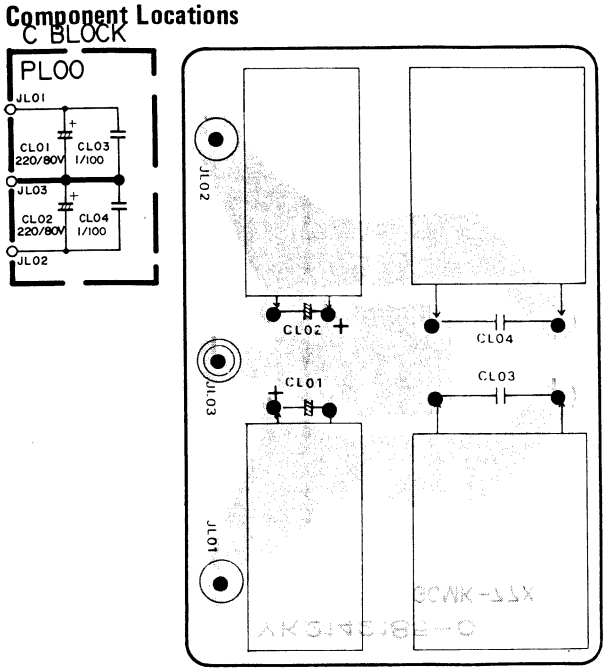




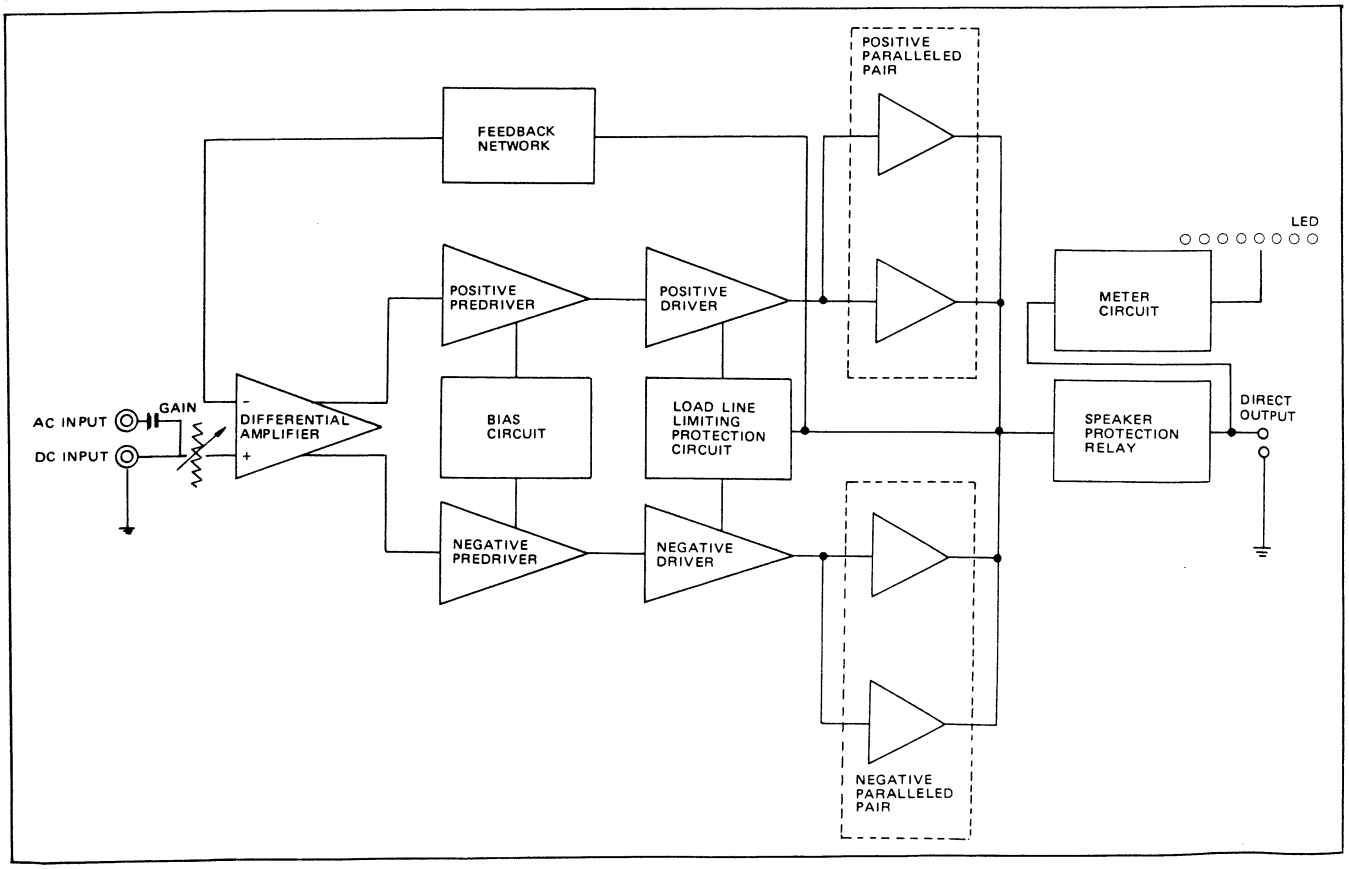
Power Supply (P800) Schematic Diagram and Component Locations



Condenser (PL00) Schematic Diagram and Component Locations

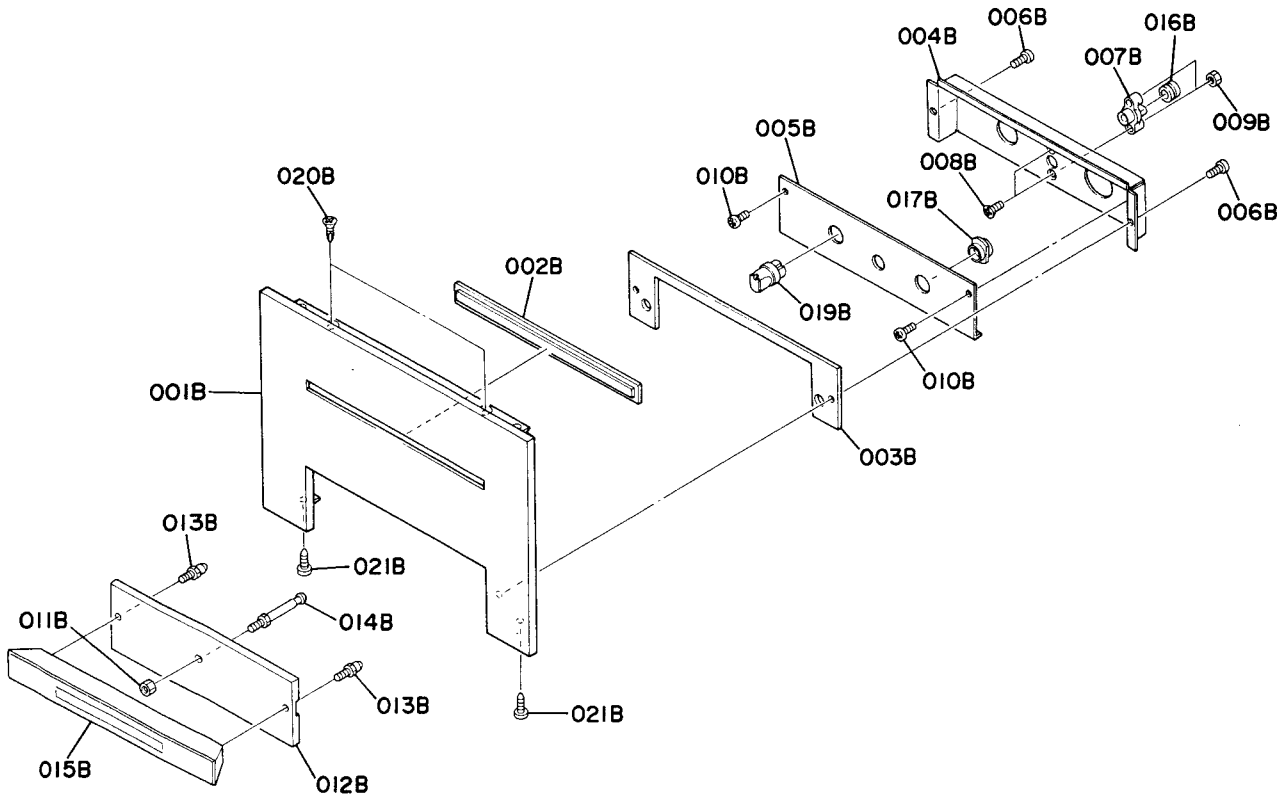


ブロックダイアグラム



⊠分解及び部品表

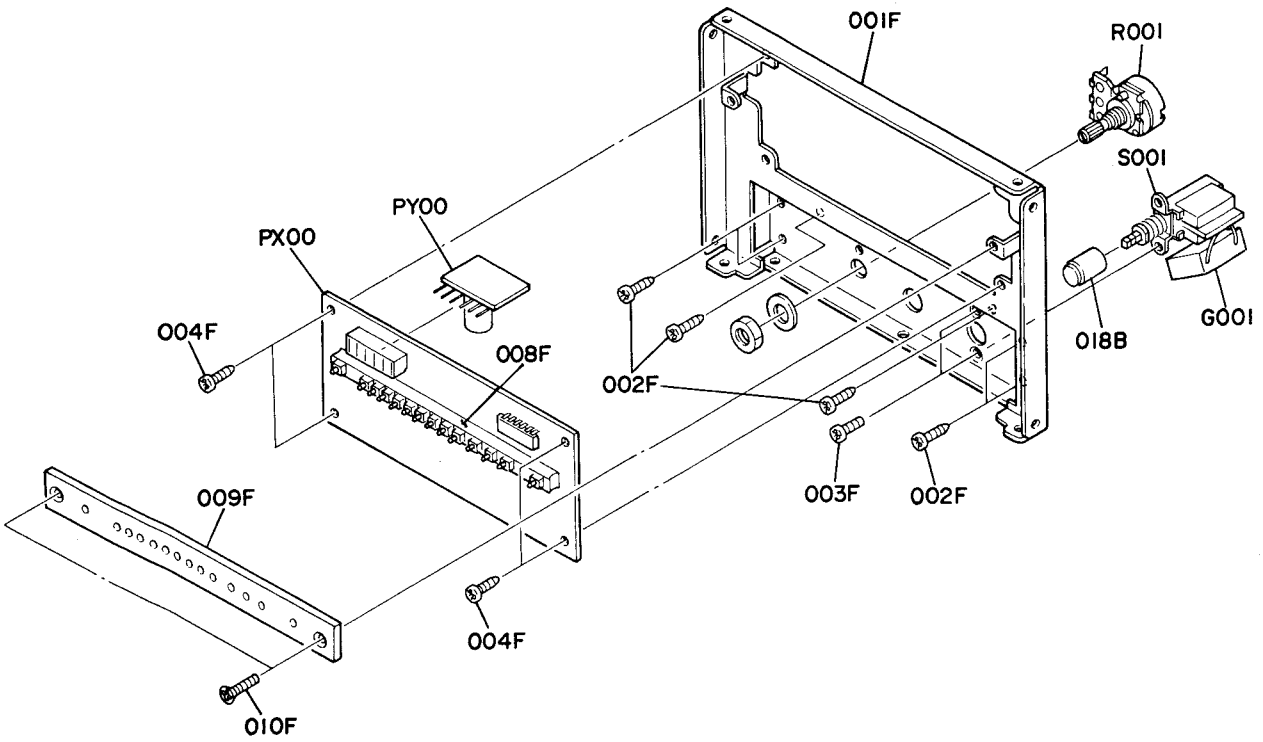
● (CO1-99)前面パネル



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
A	1	2142063400	Front Panel Assembly
001B	1	2142063012	Escutcheon, Front Panel
002B	1	2142158012	Window, LED
003B	1	2461063030	Escutcheon, Pocket Frame
004B	1	2142160020	Bracket
005B	1	2142063020	Escutcheon, Pocket Panel
006B	2	51060305A9	P.H.M. Screw P3 x 5
007B	1	2461271012	Holder
008B	2	51042610A0	F.H.M. Screw F2.6 x 10
009B	2	53112603A0	Hexagon Nut
010B	2	51100204E0	B.H.M. Screw B2 x 4
016B	1	1143259010	Bushing, Pocket Holder
017B	1	2491259010	Bushing, Push Switch

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
019B	1	2461154010	Knob, GainVR
020B	2	51340306B0	F.H. Tapped Screw F3 x 6
021B	2	51300306U0	B.H. Tapped Screw B3 x 6
B	1	2142063410	Pocket Cover Assembly
011B	1	53110303E9	Hexagon Nut
012B	1	2461063050	Escutcheon, Cover
013B	2	2461254012	Pin
014B	1	2461254022	Pin
015B	1	2461253110	Handle

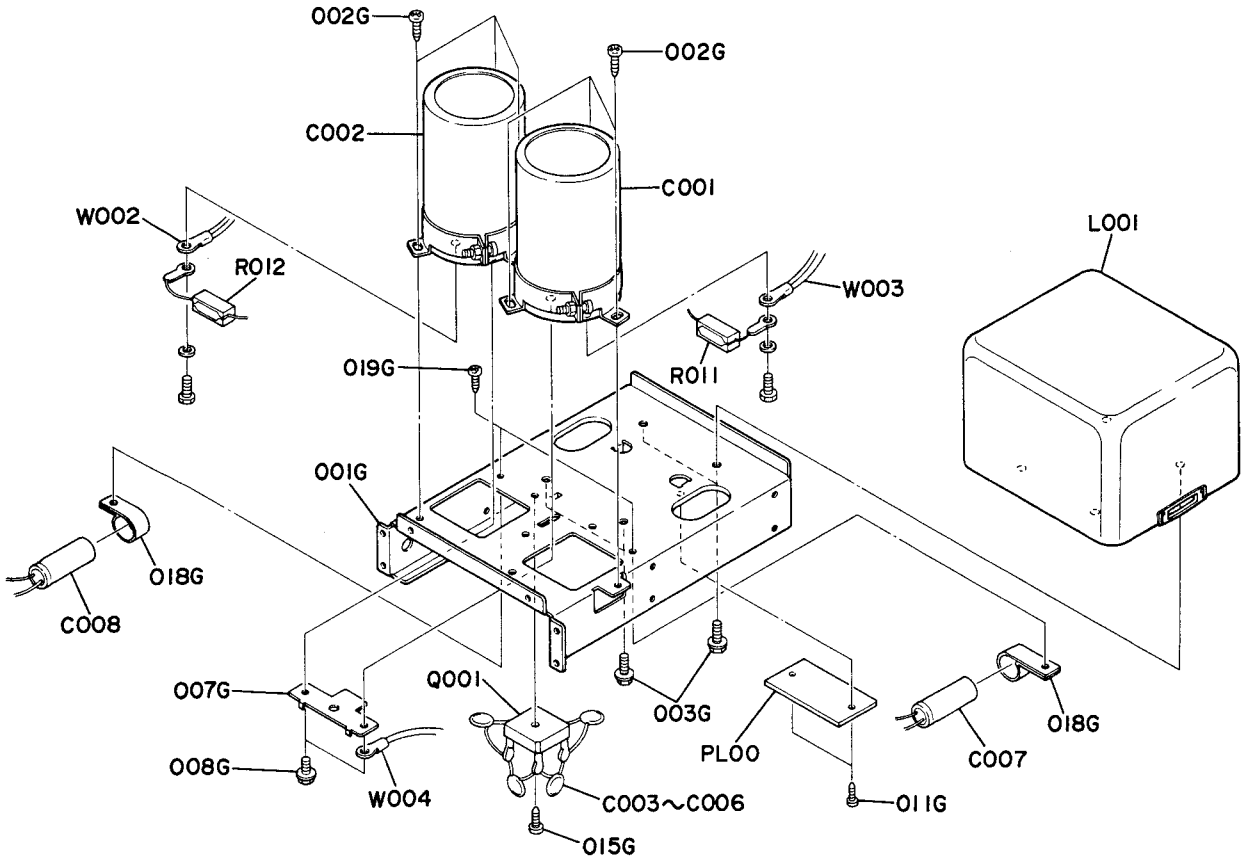
●(P01－99)前面シャーシ



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
018B	1	2462154220	Knob, Push Switch
001F	1	2142160012	Bracket, Front Chassis
002F	6	51280308B0	B.H. Tapped Screw B3 x 8
003F	2	51060306A9	P.H.M. Screw P3 x 6
004F	4	51280308B0	B.H. Tapped Screw B3 x 8
008F	1	2142056010	Buffer
009F	1	2142118010	Spacer
010F	2	51340310B0	F.H. Tapped Screw F3 x 10

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
G001	1	BF10400040	Cap. Comp. 0.1μF + 120Ω
R001	1	RK05030310	Variable Resist 50KΩ (B)
S001	1	SP01010320	Push Switch, Power
PX00	1	YK21421830	P.W. Board, Peak LED
PY00	1	YK21421870	P.W. Board, Connector

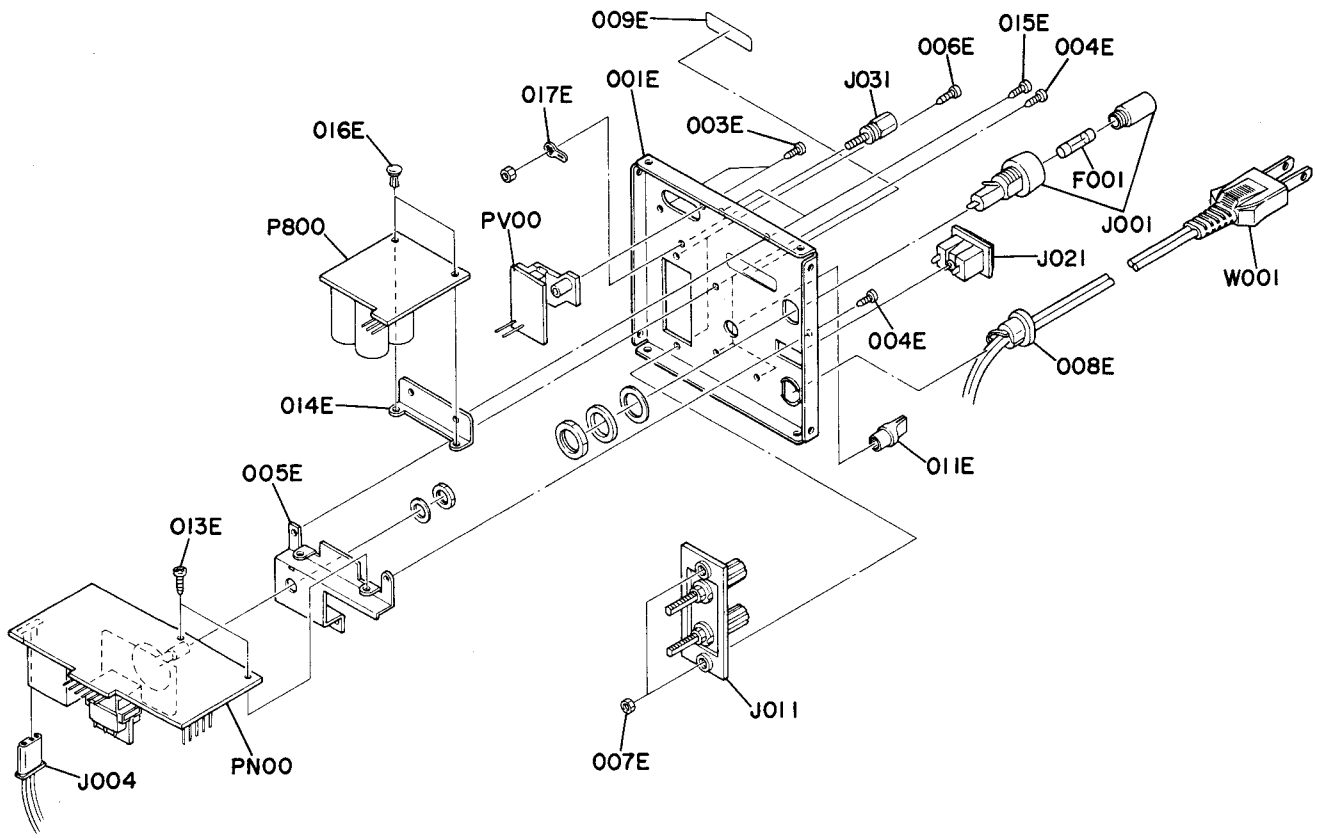
●(P02−99)メイン・シャーシ



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001G	1	2142105013	Chassis, Main
002G	6	5128040880	B.H. Tapped Screw B4 x 8
003G	4	52040410A0	H. Head Bolt, S. F H4 x 10
007G	1	2142123022	Contactor
008G	2	5147040889	L. Washer Screw L4 x 8
011G	2	5128030880	B.H. Tapped Screw B3 x 8
015G	1	5128031280	B.H. Tapped Screw B3 x 12
018G	2	4656005010	Clamper
019G	2	51102608A0	B.H.M. Screw B2.6 x 8
C001	1	EC22907510	Elect Cap. 22000μF 75V
C002	1	EC22907510	Elect Cap. 22000μF 75V
C003	1	DK18103510	Ceramic Cap. 0.01μF 500V
C004	1	DK18103510	Ceramic Cap. 0.01μF 500V
C005	1	DK18103510	Ceramic Cap. 0.01μF 500V
C006	1	DK18103510	Ceramic Cap. 0.01μF 500V
C007	1	EA22708020	Elect Cap. 220μF 80V
C008	1	EA22708020	Elect Cap. 220μF 80V

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
L001	1	TS19611030	Power Transformer
Q001	1	HD20004290	Diode S5VB-20
R011	1	GS10222030	Resistor 2.2KΩ ±10% 3W
R012	1	GD10222030	Resistor 2.2KΩ ±10% 3W
W002	1	YB02600010	Connective Cord (BLU) −
W003	1	YB02600020	Connective Cord (YEL) +
W004	1	YB01900010	Connective Cord (Black) G
PL00	1	YK21421850	P.W. Board, Condenser

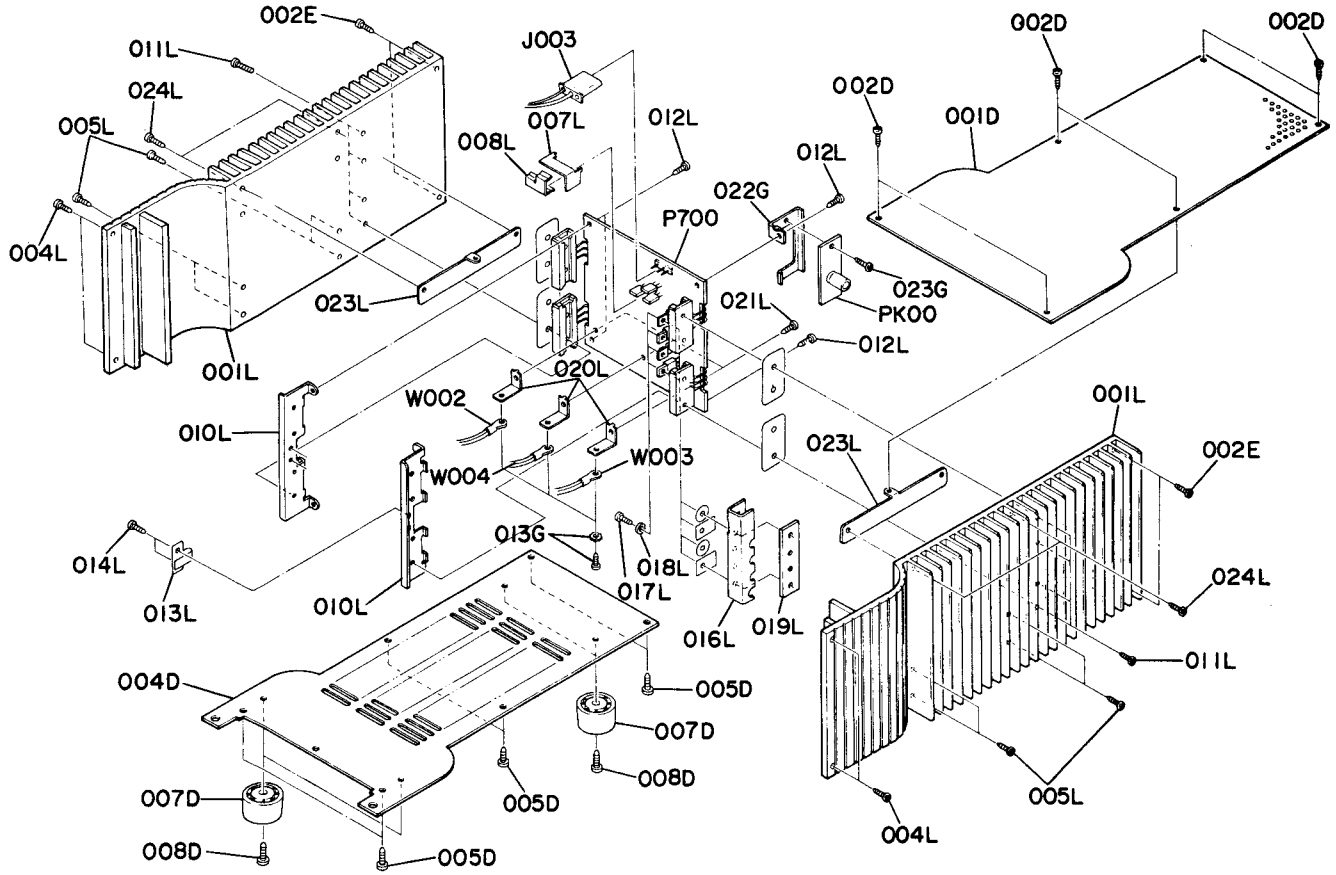
●(P03−99)後面パネル



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001E	1	2142160214	Bracket, Pear Panel
003E	2	51280310U0	B.H. Tapped Screw B3 x 10
004E	4	51280308U0	B.H. Tapped Screw B3 x 8
005E	1	2142160052	Bracket
006E	2	5110030859	B.H.M. Screw B3 x 8
007E	2	53110303A9	Hexagon Nut
008E	1	1455259090	Bushing, AC Cord
009E	1	2112265010	Indicator
011E	1	2988154012	Knob, Selector
013E	2	51280308B0	B.H. Tapped Screw B3 x 8
014E	1	2142160060	Bracket
015E	2	51280308U0	B.H. Tapped Screw B3 x 8
016E	2	2276005050	Clamper
017E	1	62030049W0	Lug

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
F001	1	FS10400020	Fuse 4A 250V
J001	1	YJ0800030	Jack, Fuse Holder
J004	1	YJ06002120	Jack (3P)
J011	1	YT03020040	Terminal, Speaker
J021	1	YJ04000560	Jack, AC Outlet
J031	1	YT01010050	Terminal, GND
W001	1	YC02400182	A.C. Power Cord
P800	1	YK21421820	P.W. Board, Power Supply
PN00	1	YK21421840	P.W. Board, Spk. Protector and A-B Switch
PV00	1	YK21421860	P.W. Board, Input

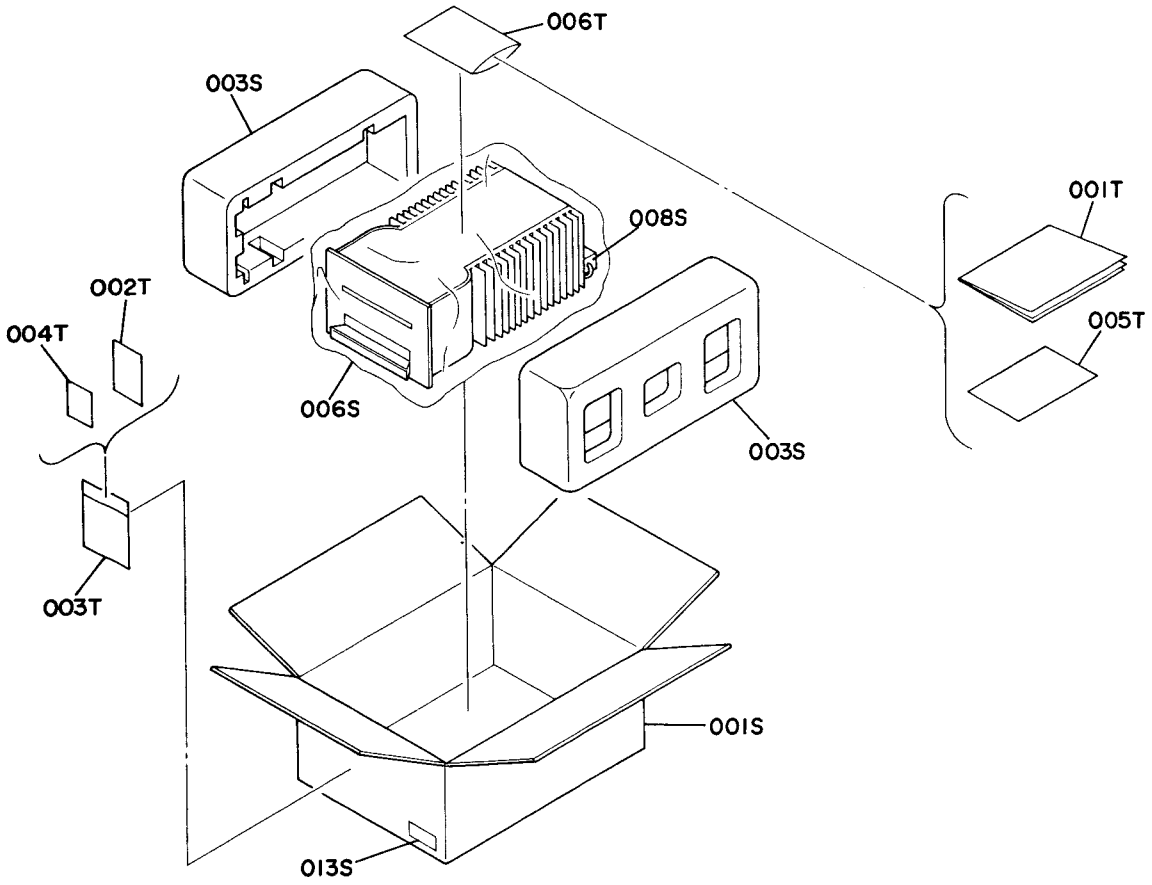
●(P04−99)上面・底面カバー及びヒートシンク



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001D	1	2142053013	Top Cover
002D	6	51280306U0	B.H. Tapped Screw B3 x 6
004D	1	2142257010	Lid, Bottom Cover
005D	6	51280410U0	B.H. Tapped Screw B4 x 10
007D	4	2142057010	Leg
008D	4	5157041080	P. Taptite Screw P4 x 10
002E	4	51280310U0	B.H. Tapped Screw B3 x 10
013G	3	51600306B0	Washer Screw 3 x 6
022G	1	2142160070	Bracket
023G	1	51280308B0	B.H. Tapped Screw B3 x 8
001L	2	2142267040	Heatsink, Main
004L	4	51280310U0	B.H. Tapped Screw B3 x 10
005L	8	51280310U0	B.H. Tapped Screw B3 x 10
007L	1	2990267080	Heatsink
008L	1	2990115020	Spring
010L	2	2142160030	Bracket
011L	8	5110031489	B.H.M. Screw B3 x 14
012L	4	51100306A9	B.H.M. Screw B3 x 6
013L	1	2142115010	Spring
014L	2	51100305A9	B.H.M. Screw B3 x 5

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
016L	1	2142267032	Heatsink
017L	4	51100308A9	B.H.M. Screw B3 x 8
018L	4	2219259030	Bushing
019L	1	2142160080	Bracket
020L	3	2142123030	Contactor
021L	3	51600306B0	Washer Screw 3 x 6
023L	2	2142160040	Bracket
024L	4	51280308U0	B.H. Tapped Screw B3 x 8
J003	1	YJ06002190	Jack, (3P) Connector
P700	1	YK21421810	P.W. Board, Main Amp.
PK00	1	YK21421880	P.W. Board, Sub Amp.

●梱包図



REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001S	1	2142801012	Packing Case
003S	2	2142809010	Cushion
006S	1	9090909040	Polyethy Sheet
008S	1	2864804010	Sleeve
013S	2	9526019040	Serial No. Card

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
001T	1	2142851110	Instructions
002T	1	9631000110	Guarantee Card
003T	1	2976813020	Envelope
004T	1	2976851042	Instructions
005T	1	9650000033	S. Station Card
006T	1	9013025010	Polyethy Bag

◇電気部品表

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
			P700-MAIN AMP. CIRCUIT BOARD
P700	1	YK21421810	P.W. Board, Main Amp.
			P700-CAPACITORS
C701	1	DF55221090	Film 220pF ±5%
C702	1	DF15182350	Film 0.0018μF ±5%
C703	1	DF15182350	Film 0.0018μF ±5%
C704	1	DF76470550	Film 47pF ±10%
C705	1	DF76680550	Film 68pF ±10%
C706	1	DF76680550	Film 68pF ±10%
C707	1	EA10602530	Elect 10μF 25V
C708	1	DF15472350	Film 0.0047μF ±5%
C709	1	DF15472350	Film 0.0047μF ±5%
C710	1	EA33505030	Elect 3.3μF 50V
C711	1	EA33505030	Elect 3.3μF 50V
C712	1	DF16103350	Film 0.01μF ±10%
C713	1	DF76220550	Film 22pF ±10%
C714	1	EA47701630	Elect 470μF 16V
C715	1	EA47701630	Elect 470μF 16V
C716	1	DF16104500	Film 0.1μF ±10%
C717	1	DF16104500	Film 0.1μF ±10%
C718	1	DF16102350	Film 0.001μF ±10%
C719	1	DF16102350	Film 0.001μF ±10%
C720	1	DF17474510	Film 0.47μF ±20%
C721	1	DF17474510	Film 0.47μF ±20%
C722	1	EA10708020	Elect 100μF 80V
C723	1	EA10708020	Elect 100μF 80V
			P700-RESISTORS (All Resistors are ±5% and ¼W)
R701	1	GD05102140	1KΩ
R702	1	GD05104140	100KΩ
R703	1	GD05561140	560Ω
R704	1	GD05561140	560Ω
R705	1	GD05102140	1KΩ
R706	1	GD05183140	18KΩ
R707	1	GD05102140	1KΩ
R708	1	GD05181140	180Ω
R709	1	GD05122140	1.2KΩ
R710	1	GD05104140	100KΩ
R711	1	GD05822140	8.2KΩ
R712	1	GD05272140	2.7KΩ
R713	1	GD05822140	8.2KΩ
R714	1	GD05272140	2.7KΩ
R715	1	RA02230050	22KΩ Trimming
R716	1	GG05562120	5.6KΩ ½W
R717	1	GG05472120	4.7KΩ ½W
R718	1	GA05100010	10Ω 1W
R719	1	GD05222140	2.2KΩ
R720	1	GD05222140	2.2KΩ
R721	1	GD05470140	47Ω
R722	1	GD05470140	47Ω
R723	1	GD05222140	2.2KΩ
R724	1	GD05222140	2.2KΩ
R725	1	GD05563140	56KΩ
R726	1	GD05563140	56KΩ
R727	1	GD05222140	2.2KΩ
R728	1	GD05222140	2.2KΩ
R729	1	RF05331140	330Ω Fusible
R730	1	RF05331140	330Ω Fusible

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
R731	1	GD05332140	3.3KΩ
R732	1	GD05153140	15KΩ
R733	1	GD05562140	5.6KΩ
R734	1	GD05821140	820Ω
R735	1	RF05330140	33Ω Fusible
R736	1	RF05330140	33Ω Fusible
R737	1	GD05682140	6.8KΩ
R738	1	GD05682140	6.8KΩ
R739	1	GD05223140	22KΩ
R740	1	GD05331140	330Ω
R741	1	GD05331140	330Ω
R742	1	GD05102140	1KΩ
R743	1	GD05102140	1KΩ
R744	1	GD05102140	1KΩ
R745	1	GD05102140	1KΩ
R746	1	RF05331120	330Ω ½W Fusible
R747	1	GA05560010	56Ω 1W
R748	1	GG05100120	10Ω ½W
R749	1	GG05100120	10Ω ½W
R750	1	GG05100120	10Ω ½W
R751	1	GG05100120	10Ω ½W
R752	1	GG05047140	4.7Ω
R753	1	GG05047140	4.7Ω
R754	1	GG05047140	4.7Ω
R755	1	GG05047140	4.7Ω
R756	1	GO10272050	0.27Ω 10% 5W
R757	1	GO10272050	0.27Ω 10% 5W
R758	1	GO10272050	0.27Ω 10% 5W
R759	1	GO10272050	0.27Ω 10% 5W
R760	1	GD05273140	27KΩ
			P700-SEMICONDUCTORS
Q701	1	HC10043050	IC 2SK150
Q702	1	HT322592F0	Transistor 2SC2259(F or G)
Q703	1	HT322402A0	Transistor 2SC2240(GR or BL)
Q704	1	HT109702A0	Transistor 2SA970(GR or BL)
Q705	1	HT109702A0	Transistor 2SA970(GR or BL)
Q706	1	HT109701A0	Transistor 2SA970(GR)
Q707	1	HT322401A0	Transistor 2SC2240(GR)
Q708	1	HT109491B0	Transistor 2SA949(Y)
Q709	1	HT322291B0	Transistor 2SC229(Y)
Q710	1	HT315681S0	Transistor 2SC1568(S)
Q711	1	HT109702A0	Transistor 2SA970(GR or BL)
Q712	1	HT318152A0	Transistor 2SC1815(O or Y)
Q713	1	HT110152A0	Transistor 2SA1015(O or Y)
Q714	1	HT407571C0	Transistor 2SD757(C)
Q715	1	HT207171C0	Transistor 2SB717(C)
Q716	1	HT322381C0	Transistor 2SC2238(O)
Q717	1	HT109681C0	Transistor 2SA968(O)
Q718	1	HT325642A0	Transistor 2SC2564(R or O)
Q719	1	HT110942A0	Transistor 2SA1094(R or O)
Q720	1	HT325642A0	Transistor 2SC2564(R or O)
Q721	1	HT110942A0	Transistor 2SA1094(R or O)
Q722	1	HD30025090	Zener WZ150
Q723	1	HD30025090	Zener WZ150
Q724	1	HD20011050	Diode 1S1555
Q725	1	HD20011050	Diode 1S1555
Q726	1	HD20011050	Diode 1S1555
Q727	1	HD20011050	Diode 1S1555
Q730	1	HV00002120	Varistor SV-3A
Q731	1	HD20011050	Diode 1S1555
Q732	1	HD20011050	Diode 1S1555

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
Q733	1	HD20011050	Diode 1S1555
Q734	1	HD20011050	Diode 1S1555
Q735	1	HD20011050	Diode 1S1555
Q736	1	HD20011050	Diode 1S1555
Q737	1	HD20011050	Diode 1S1555
Q738	1	HD20011050	Diode 1S1555
Q739	1	HD20011010	Diode W06C
Q740	1	HD20011010	Diode W06C
Q741	1	HP00004230	Varistor PTH487A(BE)
			P700-MISCELLANEOUS
J701	1	YP06000300	Plug (3P)
J702	1	YJ06000330	Jack (3P)
J703	1	YJ06000360	Jack (6P)
J704	1	2142123030	Contactor
J705	1	2142123030	Contactor
J706	1	2142123030	Contactor
J707	1	YP06001040	Plug (3P)
			P800-POWER SUPPLY CIRCUIT BOARD
P800	1	YK21421820	P.W. Board, Power Supply
			P800-CAPACITORS
C801	1	DK18103510	Ceramic 0.01μF 500V
C802	1	DK18103510	Ceramic 0.01μF 500V
C803	1	DK18103510	Ceramic 0.01μF 500V
C804	1	DK18103510	Ceramic 0.01μF 500V
C805	1	EA33708010	Elect 330μF 80V
C806	1	EA33708010	Elect 330μF 80V
C807	1	EA33708010	Elect 330μF 80V
C808	1	EA33708010	Elect 330μF 80V
C809	1	DF16105510	Film 1μF ±10%
C810	1	DF16105510	Film 1μF ±10%
			P800-SEMICONDUCTORS
Q801	1	HD20011010	Diode W06C
Q802	1	HD20011010	Diode W06C
Q803	1	HD20011010	Diode W06C
Q804	1	HD20011010	Diode W06C
			P800-PLUG
J801	1	YP06000330	Plug (3P)
			PK00-SUB AMP. CIRCUIT BOARD
PK00	1	YK21421880	P.W. Board, Sub Amp.
CK01	1	EA10516030	Elect Cap. 1μF 160V
RK01	1	GJ05562010	Resistor 5.6KΩ ±5% 1W
RK02	1	GJ05562010	Resistor 5.6KΩ ±5% 1W
QK01	1	HD20010210	Diode 1S2471G
QK02	1	HD20010210	Diode 1S2471G
QK03	1	HD20005010	Diode W06B
QK04	1	HD20005010	Diode W06B

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
			PL00-CONDENSER CIRCUIT BOARD
PL00	1	YK21421850	P.W. Board, Condenser
			PL00-CAPACITORS
CL01	1	EA22708020	Elect 220μF 80V
CL02	1	EA22708020	Elect 220μF 80V
CL03	1	DF16105520	Film 1μF ±10%
CL04	1	DF16105520	Film 1μF ±10%
			PN00-SPK. PROTECTOR & A-B SWITCH CIRCUIT BOARD
PN00	1	YK21421840	P.W. Board, Spk. Protector and A-B Switch
			PN00-CAPACITORS
CN01	1	DF17104520	Film 0.1μF ±20%
CN02	1	DK18103510	Ceramic 0.01μF
CN03	1	DK18103510	Ceramic 0.01μF
CN04	1	DK18103510	Ceramic 0.01μF
CN05	1	EA10705030	Elect 100μF 50V
CN06	1	EA10505030	Elect 1μF 50V
CN07	1	EA10701030	Elect 100μF 10V
CN08	1	EA22601630	Elect 22μF 16V
			PN00-RESISTORS (All Resistors are ±5% and ¼W)
RN01	1	RA01020150	1KΩ (B) Trimming
RN02	1	RA05020130	4.7KΩ (B) Trimming
RN03	1	GD05102140	1KΩ
RN04	1	GD05152140	1.5KΩ
RN05	1	GA05100030	10Ω 3W
RN07	1	GD05153140	15KΩ
RN08	1	GD05333140	33KΩ
RN10	1	GD05823140	82KΩ
RN11	1	GD05562140	5.6KΩ
RN12	1	GG05221120	220Ω ½W
RN13	1	GD05223140	22KΩ
RN14	1	GD05153140	15KΩ
RN15	1	GG05183120	18KΩ ½W
RN16	1	GD05124140	120KΩ
RN17	1	GD05473140	47KΩ
RN18	1	GD05822140	8.2KΩ
RN19	1	GD05683140	68KΩ
RN20	1	GD05103140	10KΩ
RN21	1	RC10033120	3.3Ω ½W
RN22	1	RC10033120	3.3Ω ½W
			PN00-SEMICONDUCTORS
QN01	1	HC10042050	IC TA7317P
QN02	1	HD20005010	Diode W06B
QN03	1	HD20005010	Diode W06B
QN04	1	HD20005010	Diode W06B
QN05	1	HD20005010	Diode W06B
			PN00-MISCELLANEOUS
JN01	1	YP06000300	Plug (3P)
JN02	1	YP06000360	Plug (6P)
LN01	1	LJ28115090	Coil 0.5μH
LN02	1	LY20240150	Relay JC2A-DC24V
SN01	1	SR06020150	Rotary Switch, A-B SW

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
			PV00-INPUT CIRCUIT BOARD
PV00	1	YK21421860	P.W. Board, Input
CV01	1	EQ10601610	Elect Cap. 10μF 16V
JV01	1	YT02020190	Terminal (2P)
			PX00-PEAK LED CIRCUIT BOARD
PX00	1	YK21421830	P.W. Board, Peak Led
			PX00-CAPACITORS
CX01	1	DF16104300	Film 0.1μF ±10%
CX02	1	DF16474510	Film 0.47μF ±10%
CX03	1	DF16223300	Film 0.022μF ±10%
CX04	1	EA22602530	Elect 22μF 25V
			PX00-RESISTORS
RX01	1	GJ05181020	180Ω 2W
RX02	1	GD05334140	330KΩ
RX03	1	RA01020150	1KΩ (B) Trimming
RX04	1	GD05102140	1KΩ
RX05	1	GD05472140	4.7KΩ
RX06	1	GD05102140	1KΩ
RX07	1	GD05104140	100KΩ
RX08	1	GD05473140	47KΩ
RX09	1	GD05682140	6.8KΩ
RX10	1	GD05563140	56KΩ
RX11	1	GD05822140	8.2KΩ
RX12	1	GJ05471010	470Ω 1W
RX13	1	GF05681120	680Ω ½W
			PX00-SEMICONDUCTORS
QX01	1	HC10041050	IC TA7318P-2
QX02	1	HC10002380	IC μAA170
QX03	1	HI10017020	L.E.D. LN36BP
QX04	1	HI10017020	L.E.D. LN36BP
QX05	1	HI10017020	L.E.D. LN36BP
QX06	1	HI10017020	L.E.D. LN36BP
QX07	1	HI10017020	L.E.D. LN36BP
QX08	1	HI10017020	L.E.D. LN36BP
QX09	1	HI10017020	L.E.D. LN36BP
QX10	1	HI10017020	L.E.D. LN36BP
QX11	1	HI10017020	L.E.D. LN36BP
QX12	1	HI10009020	L.E.D. LN26RP
QX13	1	HI10009020	L.E.D. LN26RP
QX14	1	HI10009020	L.E.D. LN26RP
QX15	1	HI10018020	L.E.D. LN46YP
QX16	1	HI10018020	L.E.D. LN46YP
QX17	1	HD20011050	Diode 1S1555
QX18	1	HD20011050	Diode 1S1555
			PX00-JACK
JX01	1	YJ06000360	Jack (6P)

REF. DESIG.	Q'TY F	PART NO.	DESCRIPTION
			PY00-CONNECTOR CIRCUIT BORAD
PY00	1	YK21421870	P.W. Board, Connector
CY01	1	EA22703530	Elect Cap. 220μF 35V
RY01	1	GG05100140	Resistor 10Ω ±5% ¼W
JY01	1	YP06000360	Plug (6P)

(W01-99)	**Assembly and Wiring**
(T01-99)	**Adjustment**
(X01-00)	**Correction**

8

marantz®

MARANTZ CO., INC. · P.O. BOX 577 · CHATSWORTH, CALIFORNIA · 91311

A WHOLLY-OWNED SUBSIDIARY OF SUPERSCOPE INC., CHATSWORTH, CALIFORNIA · 91311

MARANTZ is a registered trademark of Marantz Company, Inc. A subsidiary of Superscope, Inc.

Printed in Japan

2142855040SG
1980/6

Model Ma-5 (F)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
001E	1	2142160210	Bracket, Rear Panel
002E	4	51280310U0	B.H. Tapped Screw B3 x 10
003E	2	51280310U0	B.H. Tapped Screw B3 x 10
008E	1	1455259090	Bushing AC Cord
017E	1	62030049W0	Lug
008D	4	51570410S0	P. Taptite Screw P4 x 10
004L	4	51280310U0	B.H. Tapped Screw B3 x 10
005L	8	51280310U0	B.H. Tapped Screw B3 x 10
012L	4	51100306A9	B.H.M. Screw B3 x 6
014L	2	51100305A9	B.H.M. Screw B3 x 5
023L	2	2142160040	Bracket
024L	4	51280308U0	B.H. Tapped Screw B3 x 8
008G	2	51470408B9	L. Washer Screw
011G	2	51280308B0	B.H. Tapped Screw B3 x 8
013G	3	51600306B0	Washer Screw
018G	2	4656005010	Clamper
019G	2	51102608A0	B.H.M. Screw B2.6 x 8
013S	2	9526019040	Serial No. Card
001T	1	2142851110	Instructions
002T	1	9631000110	Guarantee Card
003T	1	2976813020	Envelope
004T	1	2976851040	Instructions
005T	1	9650000030	S. Station Cord
006T	1	9013025010	Polyethy Bag
F001	1	FS10400020	Fuse 4A 250V
G001	1	BF10400040	Cap. Comp. 0.1μF+120Ω
L001	1	TS19611030	Power Transformer
W001	1	YC02400180	A.C. Power Cord
CL03	1	DF16105520	Film 1μF ±10%
CL04	1	DF16105520	Film 1μF ±10%
C720	1	DF17474510	Film 0.47μF ±20%
C721	1	DF17474510	Film 0.47μF ±20%
C809	1	DF16105510	Film 1μF ±10%
C810	1	DF16105510	Film 1μF ±10%
Q730	1	HV00002120	Varistor SV-3A
R733	1	GD05562140	5.6KΩ 1/4W
R747	1	GD05560010	56Ω 1W
CX01	1	DF16104300	Film 0.1μF ±10%
CX03	1	DF16223300	Film 0.022μF ±10%

Model Ma-5 (E)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
001E	1	2142160220	Bracket, Rear Panel
002E	4	51300310U0	B.H. Tapped Screw B3 x 10
003E	2	51280308U0	B.H. Tapped Screw B3 x 8
008E	1	1455259040	Bushing AC Cord
017E	1	62040029W0	Lug
018E	1	2137114010	Stopper
019E	2	51100306S9	B.H.M. Screw B3 x 6
008D	4	51570420A0	P. Taptite Screw P4 x 20
009D	1	51280406U0	B.H. Tapped Screw B4 x 6
004L	4	51300310U0	B.H. Tapped Screw B3 x 10
005L	8	51300310U0	P.H. Tapped Screw B3 x 10
012L	4	51280308B0	B.H. Tapped Screw B3 x 8
014L	2	51280305B0	B.H. Tapped Screw B3 x 5
023L	2	2142160090	Bracket
024L	4	51300310U0	P.H. Tapped Screw B3 x 10
025L	4	54020301A0	Flat Washer
010G	3	51100306E9	B.H.M. Screw B3 x 6
012G	2	62040029W0	Lug
014G	3	54050400R0	T.L. Washer
013S	2	9526019060	Serial No. Card
016S	1	2731821010	Silicagel
001T	1	2142851310	Instructions
002T	1	2142851320	Spec Flysheet
003T	1	2142856010	Circuit Diagram
004T	1	9013025010	Polyethy Bag
001R	1	2932861010	Label
002R	1	2578861010	Label
003R	1	2882861020	Label
F001	1	FS10200010	Fuse 2A 250V
G001	1	BF10400060	Cap. Comp. 0.1μF+120Ω
J091	1	SS02020510	Voltage Selector
L001	1	TS19611040	Power Transformer
R013	1	GD05100140	Resistor 10Ω 1/4W
W001	1	YC01900030	A.C. Power Cord
Q730	1	HV00003080	Varistor SV-02
Q742	1	HD20011050	Diode 1S1555
R733	1	GD05392140	3.9KΩ 1/4W
R747	1	GA05270010	27Ω 1W
R761	1	GD05220140	22Ω 1/4W
CX01	1	EE10505010	Elect 1μF 50V
CX03	1	DF16273300	Film 0.027μF 50V
CX05	1	EA47703540	Elect 470μF 35V

Model Ma-5 (F)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
RX03	1	RA01020150	1KΩ(B) Trimming
RN07	1	GD05153140	15KΩ 1/4W
RN14	1	GD05153140	15KΩ 1/4W
RN16	1	GD05124140	120KΩ 1/4W
RN19	1	GD05683140	68KΩ 1/4W
CY01	1	EA22703530	Elect Cap. 220μF 35V

Model Ma-5 (E)

REF. DESIG.	Q'TY	PART NO.	DESCRIPTION
RX03	1	RA01020210	1KΩ(B) Trimming
RN07	1	GD05183140	18KΩ 1/4W
RN09	1	GD05124140	120KΩ 1/4W
RN14	1	GD05124140	120KΩ 1/4W
RN16	1	GD05564140	560KΩ 1/4W
RN19	1	GD05233140	22KΩ 1/4W
CY01	1	DF17474520	Film 0.47μF 20V
P700	1	YK21421810	P.W. Board, Main Amp
	1	ZZ21428810	P.W. Board Assembly
P800	1	YK21421820	P.W. Board, Power Supply
	1	ZZ21428820	P.W. Board Assembly
PK00	1	YK21421880	P.W. Board, Sub Amp
	1	ZZ21421880	P.W. Board Assembly
PL00	1	YK21421850	P.W. Board, Condenser
	1	ZZ21428850	P.W. Board Assembly
PN00	1	YK21421840	P.W. Board SPK. Protector
	1	ZZ21421840	P.W. Board Assemly
PV00	1	YK21421860	P.W. Board, In Put
	1	ZZ21421860	P.W. Board Assembly
PX00	1	YK21421830	P.W. Board, Peak Led
	1	ZZ21421830	P.W. Board Assembly
PY00	1	YK21421870	P.W. Board, Connector
	1	ZZ21421870	P.W. Board Assembly

TECHNICAL SPECIFICATIONS

AUDIO SECTION

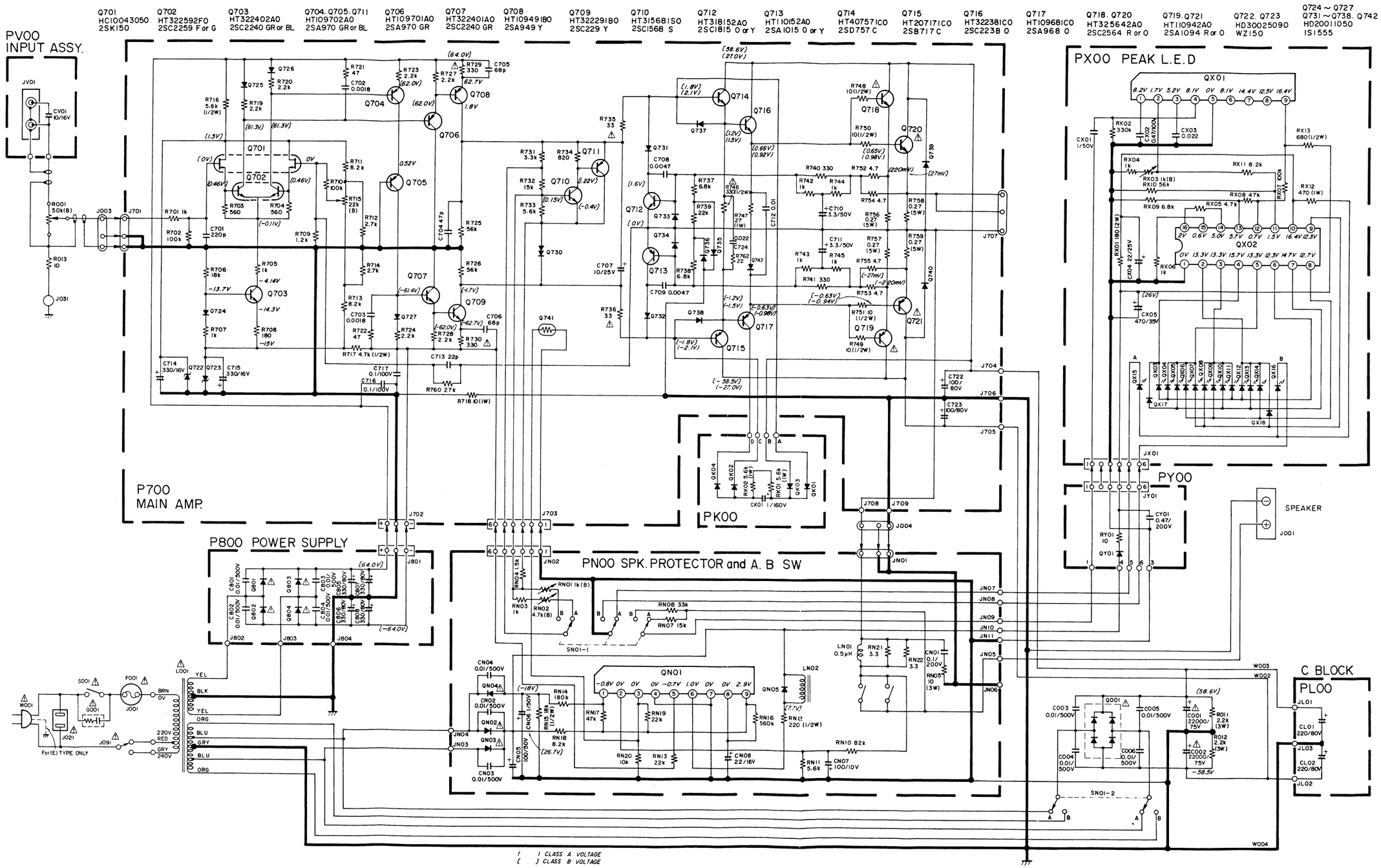
Rated Power Output ..... Class B 120W (8Ω)
150W (4Ω)
Class A 30W (8Ω)
Power Band width (8Ω load, 0.05% THD) ..... 5 Hz ~ 100 kHz
Total Harmonic Distortion (20 Hz ~ 20 kHz, 8Ω load) ..... Less than 0.01 %
Intermodulation Distorsion ..... Less than 0.01 %
Frequency Response
(20 Hz ~ 20 kHz) ..... +0, –0.2 dB
(+0, –1 dB) ..... DC ~ 100 kHz
Input Sensitivity and Impedance ..... 1.5V/30 kΩ
Damping Factor (8Ω load, 1 kHz) ..... More than 100
Residual Noise (IHF-A curve) ..... 0.034 mV

GENERAL

Power Requirements ..... 220/240V AC, 50/60 Hz
Power Consumption 150W
Dimensions ..... 208 mm (W) x 146 mm (H) x 334 mm (D)
Weight ..... 10 kg

SCHEMATIC DIAGRAM

Model Ma-5



Note on safety: The parts marked with ⚠ are important parts on the safety. Please use the parts having the designated parts number without fail.

Components and wiring are subject to change for modification without notice.